

AMENDMENTS TO THE CLAIMS

Listing of Claims:

- 1.-19. (Canceled).
20. (Currently Amended) A method for dehumidification and sanitation of sewage sludge in a chamber, the method comprising:
- receiving the sewage sludge on a conveyor made of net that is located inside the chamber;
 - emitting thermal radiation from at least one element in the chamber, wherein
 - the at least one element is positioned between an upper part and a lower part of the conveyor,
 - the thermal radiation is concentrated to one or more distinct wavelength ranges at which water has peaks for absorption of radiation energy, and
 - the wavelengths of the thermal radiation are shorter than the openings of the surface structure of the sewage sludge;
 - circulating air in the chamber using a fan to take up moisture evaporated from the sewage sludge; [[:]]
 - recovering energy from the moisture using a condenser; and
 - maintaining the sewage sludge at a constant temperature within the range of 70-120 °C during the dehumidification cycle.
21. (Previously Presented) The method of claim 20, wherein the at least one element emits thermal radiation that is concentrated to exact wavelength ranges where the water has an absorption coefficient greater than approximately $1,000 \text{ cm}^{-1}$, while the radiation is reduced in other areas.
22. (Previously Presented) The method of claim 21, wherein the radiation is concentrated to the wavelength ranges of approximately 6-7 μm and approximately 10-20 μm , while the radiation in the intermediate range of approximately 7-10 μm is reduced.

23. (Previously Presented) The method of claim 20, further comprising monitoring the prevailing moisture ratio and/or the temperature of the sewage sludge and/or the chamber.

24. (Previously Presented) The method of claim 23, wherein the moisture ratio of the sewage sludge and/or the chamber is monitored by means of one or more indicators.

25. (Previously Presented) The method of claim 23, wherein the moisture ratio of the sewage sludge and/or the chamber is monitored by means of a weighing machine, monitoring the total weight of the chamber.

26. (Previously Presented) The method of claim 20, further comprising circulating the air of the chamber through a conduit going from one end of the chamber to the opposite end; wherein a heat exchanger is placed in the conduit for recovery of energy.

27.-28. (Canceled).

29. (Previously Presented) The method of claim 20, wherein the thermal radiation is reflected on high-reflective material on the inside of the chamber.

30.-31. (Canceled).

32. (Previously Presented) An apparatus for dehumidification and sanitation of sewage sludge in accordance with the method as claimed in claim 20, wherein the apparatus comprises:

indicators for sensing the temperature and/or moisture ratio of the chamber and/or the sewage sludge; and

a control system (PLC system) for controlling the at least one element and the fan in response to signals received from the indicators.

33. (Previously Presented) The apparatus of claim 32, wherein the at least one element is mounted in a rack having surfaces displaying high reflectance.

34. (Previously Presented) The apparatus of claim 32, wherein the inside of the chamber is made of or clad with a material displaying high reflectance;

wherein the chamber is provided with an air inlet, an air outlet, a fan system, and a conduit, including a heat exchanger, for recirculation of the air of the chamber and one or more ventilation dampers;

wherein indicators are provided for sensing temperature and air humidity in the chamber;

wherein indicators are provided for sensing the weight of the sewage sludge; and

wherein the signals from all indicators are fed to a calculation and control device.

35. (Previously Presented) The apparatus of claim 32, wherein the condenser is placed inside the chamber.

36. (Previously Presented) The apparatus of claim 32, wherein the at least one element comprises an electrical resistor surrounded by a tube that is made of material having properties to give the desired radiation spectrum.

37.-39. (Canceled).

40. (Previously Presented) The method of claim 20, further comprising:
recovering plant nutrients from the sewage sludge.

41. (Previously Presented) The method of claim 20, further comprising:
heating the at least one element using an energy carrying medium.